

EXHIBIT 16

REDACTED

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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

THE STATE OF TEXAS, ET)
AL.,)
Plaintiff,)
Case No.:
VS.) 4:20-cv-00957-SDJ
GOOGLE, LLC,)
Defendant.)

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VIDEOTAPED DEPOSITION OF
JACOB HOCHSTETLER
OCTOBER 1, 2024

VIDEOTAPED DEPOSITION OF JACOB HOCHSTETLER,
produced as a witness at the instance of the Defendant
and duly sworn, was taken in the above-styled and
numbered cause on Tuesday, October 1, 2024, from 9:09
a.m. to 7:46 p.m., before Kari Behan, CSR, RPR, CRR, a
Texas certified machine shorthand reporter, at the
offices of Norton Rose Fulbright US LLP, 2200 Ross
Avenue Suite 3600, Dallas, Texas 75201, pursuant to the
Federal Rules of Civil Procedure and the provisions
stated on the record herein.

Job No. 6918979

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1 Q. And are you aware that DoubleClick implemented
2 dynamic allocation before its acquisition by Google?

3 A. That is correct.

4 Q. At a high level, is it fair to say that dynamic
5 allocation is a feature of DFP that allows AdX to
6 compete in real-time with other networks or demand
7 sources that the publisher may have configured?

8 MR. HILLEGAS: Objection, form.

9 THE WITNESS: Yes.

10 BY MR. HUNSBERGER:

11 Q. And under the dynamic allocation, AdX wins the
12 impression if it has a bid from an ad network or DSP,
13 demand-side platform, that pays the publisher more than
14 the publisher's expected revenue from the alternative
15 sources, correct?

16 MR. HILLEGAS: Objection, form.

17 THE WITNESS: As long as they are all
18 remnant line items. That's the key.

19 BY MR. HUNSBERGER:

20 Q. And as a result, dynamic allocation increased
21 the publishers' ad route revenue relative to the
22 waterfall, correct?

23 MR. HILLEGAS: Objection, form.

24 THE WITNESS: I'm not certain I reviewed
25 that. Is there a paragraph where I state that?

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1 BY MR. HUNSBERGER:

2 Q. And you have no opinion in your report
3 disagreeing with the statement that dynamic allocation
4 allows publishers to maximize their earnings, correct?

5 MR. HILLEGAS: Objection, form.

6 THE WITNESS: That's correct.

7 BY MR. HUNSBERGER:

8 Q. And turning one page further, at Bates 561, do
9 you see the statement that begins: It benefits -- It
10 benefits the publisher?

11 A. Yes.

12 Q. The full quote is: It benefits the publisher
13 by filling a remnant inventory. Without blocks or
14 pricing floors, AdX and AFC has a 99 percent fill rate.

15 This statement means that dynamic
16 allocation helps publishers sell inventory that would
17 not otherwise have been sold, right?

18 MR. HILLEGAS: Objection to form.

19 THE WITNESS: Out of context, I have
20 nothing to compare it to before. Before, it also could
21 have had a 99 percent fill rate.

22 BY MR. HUNSBERGER:

23 Q. Do you agree that filling a remnant -- remnant
24 inventory means the DA helps publishers to sell
25 inventory that would not otherwise have been sold?

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1 MR. HILLEGAS: Objection, form.

2 THE WITNESS: It enabled real-time bidding
3 between remnant line items. So I'm actually having
4 trouble thinking why it would fill more inventory. In a
5 waterfall method, it would eventually get to inventory
6 that would clear a price floor and be sold. With DA,
7 we're just now doing it real-time, which is why this
8 PowerPoint -- well, not PowerPoint -- Google slide deck,
9 I -- I don't know how it does -- I don't know why
10 they -- they preface this with 99 percent fill rate. As
11 opposed to what else?

12 Was my answer clear? I'm sorry if it
13 wasn't.

14 BY MR. HUNSBERGER:

15 Q. I -- I can -- I can ask again.

16 So this document states: Dynamic
17 allocation, quote, benefits the publisher by filling a
18 remnant inventory.

19 Do you offer any opinion disagreeing with
20 the statement in this document, that dynamic allocation
21 helped publishers fill remnant inventory?

22 MR. HILLEGAS: Objection, form.

23 THE WITNESS: Without a reason why, I don't
24 know if I can agree with this statement.

25 BY MR. HUNSBERGER:

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1 Q. But you don't offer an opinion in your report
2 disagreeing with that statement, correct?

3 A. Correct.

4 Q. And we -- we talked a little bit about the
5 concept of latency a few minutes ago.

6 In -- in paragraph 131 of your report -- so
7 same -- same area we've been on -- you have in your
8 report the text, "Google states that DA solved these
9 inefficiencies by allowing AdX and remnant line" --
10 "line items (inclusive of third-party exchanges and
11 networks) to compete against each in real-time..."

12 Do you see that?

13 MR. HILLEGAS: Objection, form.

14 THE WITNESS: I do see that.

15 BY MR. HUNSBERGER:

16 Q. And one of those inefficiencies that dynamic
17 allocation solved would be the latency issue that we
18 talked about earlier, correct?

19 MR. HILLEGAS: Objection to form.

20 THE WITNESS: Yes.

21 BY MR. HUNSBERGER:

22 Q. Do you recall approximately when dynamic
23 allocation was first launched?

24 A. We're speaking about original DA?

25 Q. Correct.

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1 A. July 11th, 2007.

2 Q. And in paragraph 41 of your report, you say
3 that real-time bidding was introduced in 2009?

4 A. That's correct.

5 Q. And you're not aware of any other ad servers or
6 exchanges that offered a similar feature at the time
7 that dynamic allocation launched in 2007?

8 MR. HILLEGAS: Objection, form.

9 THE WITNESS: Not that I recall.

10 BY MR. HUNSBERGER:

11 Q. So is it fair to say that dynamic allocation
12 was a new product by DoubleClick that made DFP and AdX
13 more attractive to DoubleClick's publisher customers?

14 MR. HILLEGAS: Objection, form.

15 THE WITNESS: I can't speak as a publisher,
16 and I never use DoubleClick, so I can't really speak to
17 the attractiveness as a DoubleClick publisher.

18 BY MR. HUNSBERGER:

19 Q. Do you agree that dynamic allocation was a new
20 feature that increased revenue opportunities for
21 publishers?

22 MR. HILLEGAS: Objection, form.

23 THE WITNESS: Yes, it allowed real-time
24 bidding, which before then, it was header bidding --
25 sorry -- it was waterfall, and real-time bidding was

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1 a -- a game changer, moving away from waterfall.

2 BY MR. HUNSBERGER:

3 Q. And then in -- in paragraph 42 of your report,
4 there's a text that reads: After the waterfall
5 method...

6 Do you see that?

7 A. Yes.

8 Q. -- ...several ad selling models, such as header
9 bidding, were developed that allowed calling the
10 multiple exchanges at the same time?

11 MR. HILLEGAS: Objection, form.

12 THE WITNESS: Are you asking if I see that?

13 BY MR. HUNSBERGER:

14 Q. Yes.

15 A. Yes, I do.

16 Q. And header bidding was introduced in 2014,
17 correct?

18 A. Yes, 2014.

19 Q. So dynamic allocation was created in 2007, and
20 at that time, there were no ad selling models that
21 allowed calling multiple exchanges at the same time,
22 correct?

23 MR. HILLEGAS: Objection to form.

24 THE WITNESS: Not inside Google.

25 BY MR. HUNSBERGER:

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1 Q. And none elsewhere in the industry, correct?

2 MR. HILLEGAS: Objection, form.

3 THE WITNESS: I don't believe so.

4 BY MR. HUNSBERGER:

5 Q. Professor Hochstetler, just to level set on a
6 terminology point, you used the expression -- or the --
7 the term "CPM" in your report. That stands for cost per
8 mille?

9 A. Yes.

10 Q. And that represents the cost for every thousand
11 impressions received, paid by the ad buyer to the ad
12 seller?

13 A. Yes. It's the cost of buying an ad slot.

14 Q. And when Google -- strike that.

15 When DoubleClick implemented dynamic
16 allocation before its acquisition by Google, DFP
17 calculated the floor price using the highest final vCPM;
18 is that correct?

19 A. As I recall, yes.

20 Q. And if AdX had a buyer or buyers willing to pay
21 more for the impression than the highest CPM of all
22 those other line items, the AdX buyer would win,
23 correct?

24 MR. HILLEGAS: Objection to form.

25 THE WITNESS: As long as they were remnant.

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1 I think that's the clarification. DA did not apply to
2 guaranteed at all.

3 BY MR. HUNSBERGER:

4 Q. And it's possible that AdX could have multiple
5 bids from buyers above the price floor, correct?

6 MR. HILLEGAS: Objection, form.

7 THE WITNESS: Affirmative.

8 BY MR. HUNSBERGER:

9 Q. And these bids could be higher than a penny
10 more than the price floor? They could be a dollar more?
11 They could be \$0.50 more. They could be any amount more
12 than the price floor, correct?

13 MR. HILLEGAS: Objection to form.

14 THE WITNESS: I assume so.

15 BY MR. HUNSBERGER:

16 Q. And they could be substantially higher than a
17 penny more, right?

18 MR. HILLEGAS: Objection to form.

19 THE WITNESS: I can't remember if
20 DoubleClick had an interval that had to be set. Other
21 places, there's usually a 5-cent interval that's at
22 play, but, yes, it could be substantially higher.

23 BY MR. HUNSBERGER:

24 Q. And those bids could cause the auction to clear
25 at more than one penny above the floor, correct?

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1 MR. HILLEGAS: Objection, form.

2 THE WITNESS: Affirmative.

3 BY MR. HUNSBERGER:

4 Q. And you don't offer an opinion in your report
5 on how often bidders from AdX won an auction over the
6 floor price by a single penny, correct?

7 A. Not that I recall.

8 Q. And if the AdX buyer wins, that means the
9 impression is sold to that buyer, and an ad
10 corresponding to the winning AdX demand or the remnant
11 line item would be served, right?

12 MR. HILLEGAS: Objection, form.

13 THE WITNESS: That's correct.

14 BY MR. HUNSBERGER:

15 Q. And if the impression is sold, then there is no
16 reason to call other demand sources, correct?

17 MR. HILLEGAS: Objection, form.

18 THE WITNESS: At that time, I don't think
19 there were other demand sources in -- on the remnant
20 side.

21 BY MR. HUNSBERGER:

22 Q. And since the ad is served in that scenario,
23 there would be no waterfall auction, right?

24 A. Correct. It replaced the waterfall auction.

25 Q. Professor Hochstetler, sticking with

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1 paragraph 133 of your report, do you see that for the
2 second point -- are you there?

3 A. Yes, I am.

4 Q. -- for the second point, you say: The vCPM was
5 first specified by publishers, either as the
6 pre-negotiated CPM price with the line item's
7 corresponding demand partner or as an estimate of the
8 CPM the line item would likely generate based on
9 historical performance.

10 Do you see that language?

11 A. I do.

12 Q. [REDACTED]
[REDACTED]

14 MR. HILLEGAS: Objection, form.

15 THE WITNESS: [REDACTED]
[REDACTED]
[REDACTED]

18 BY MR. HUNSBERGER:

19 Q. And according to your -- the opinions in your
20 report, correct?

21 A. That -- that is the opinion in my report,
22 that's correct.

23 Q. Or publishers could specify the CPM based on an
24 estimate of historical performance, correct?

25 A. That is correct.

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1 Q. And publishers could set the CPM at any number
2 that they chose, right?

3 A. As I recall, [REDACTED]
4 [REDACTED]

5 Q. Other than the minimum, the publishers could
6 set the CPM at any number that they chose?

7 A. I believe so.

8 Q. And since publishers could set the CPM at any
9 number that they chose, subject to the minimum, they
10 could choose to specify the CPM based on header bidding
11 bids, for example, right?

12 MR. HILLEGAS: Objection, form.

13 THE WITNESS: This is flowing into AdX?

14 BY MR. HUNSBERGER:

15 Q. Yes.

16 A. Yes. Header bidding would have been another
17 line item in AdX.

18 Q. And publishers could set the CPM at any number
19 they chose, including through the header bidding line
20 item, correct?

21 MR. HILLEGAS: Objection to form.

22 THE WITNESS: Yes, as I recall.

23 MR. HUNSBERGER: Counsel, we are at a good
24 breaking point. And I know lunch is ready. If you're
25 ready to take a break, we are as well.

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1 MR. HILLEGAS: That sounds good.

2 THE VIDEOGRAPHER: Okay. We are off the
3 record at 12:26 p.m.

4 (Lunch break taken.)

5 THE VIDEOGRAPHER: We are back on the
6 record at 1:23 p.m.

7 BY MR. HUNSBERGER:

8 Q. Professor Hochstetler, welcome back. I hope
9 you had a good lunch.

10 A. It was.

11 Q. Agreed.

12 So we talked briefly earlier about header
13 bidding. And so I'd like to move now and discussion --
14 discuss a little bit more about header bidding.

15 Header bidding allows demand sources to
16 simultaneously bid on an impression before the
17 impression is sold from the publisher's ad server; is
18 that correct?

19 A. Yes, that is correct.

20 Q. At a high level, publishers imple- --
21 implemented header bidding by inserting code into their
22 web -- own web pages; is that right?

23 A. Client-side header bidding, yes.

24 Q. And publishers can do this by using package
25 code that is known as wrappers or frameworks from

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1 third-party providers?

2 MR. HILLEGAS: Objection, form.

3 THE WITNESS: That's correct. An example
4 of a header bidding wrapper provider is pre-bid.

5 BY MR. HUNSBERGER:

6 Q. And these wrappers pass the results of the
7 header bidding auction into DFP, correct?

8 MR. HILLEGAS: Objection, form.

9 THE WITNESS: Yes. On page 97, Figure 23,
10 it has a rough overview of how header bidding works with
11 GAM.

12 BY MR. HUNSBERGER:

13 Q. And then paragraph 179 of your report, bottom
14 of page 94, you referred to the fact that the results of
15 header bidding are sent to the DFP ad server.

16 Do you see that?

17 A. Yes. And DFP ad server, at this point, is
18 inside GAM.

19 Q. And continuing in the next paragraph, 180, you
20 note that: Header bidding did that by taking advantage
21 of Google's key value pair feature to pass in targeting
22 criteria such as the winning bid and bidder. This is
23 the core of how header bidding technologies, like
24 pre-bid, communicate with DFP.

25 Do you see that?

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1 MR. HILLEGAS: Objection to form.

2 THE WITNESS: Yes. I -- I describe that in
3 paragraph 180, that's correct.

4 BY MR. HUNSBERGER:

5 Q. Google does not offer a header bidding wrapper
6 or framework, correct?

7 A. No. Exchange bidding was created in response
8 to header bidding. But Google does not provide a
9 wrapper.

10 Q. In other words, header bidding is not a Google
11 technology, correct?

12 A. Google did not create it, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

16 Q. And Google -- just for the clarity of the
17 record, Google did not create header bidding technology,
18 correct?

19 A. That's correct.

20 Q. Continuing in your report a few paragraphs
21 down, if we jump to paragraph 194, looking at the first
22 sentence of paragraph 194, you state that, quote:

23 Client-side header bidding may affect web page loading
24 latency. Correct?

25 A. Yes, that is in the report.

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1 changes to DFP or AdX that caused it to have a,
2 quote/unquote, Last-Look advantage, in your view?

3 MR. HILLEGAS: Objection to form.

4 THE WITNESS: Can you point to me where I'm
5 quoting?

6 BY MR. HUNSBERGER:

7 Q. I -- sorry. I was using "quote/unquote" to
8 refer to the way that you characterize Last Look.

9 But the question was: At 2014 -- or in
10 2014, did Google make any changes to DFP or AdX that
11 caused it to have a Last-Look advantage?

12 A. The -- the new DA, which was enhanced dynamic
13 allocation, was introduced in March 2014.

14 Q. But the adoption of EDA did not create any,
15 quote/unquote, Last Look, correct?

16 MR. HILLEGAS: Objection, form.

17 THE WITNESS: So I believe between 2014 and
18 2019, Last Look incorporated the best remnant line item
19 into the AdX auction floor price, and that was what I
20 referred to as "Last Look."

21 BY MR. HUNSBERGER:

22 Q. And this Last Look was caused in 2014 by
23 publishers adopting header bidding, correct?

24 MR. HILLEGAS: Objection, form.

25 THE WITNESS: I don't know if I reference

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1 why Last Look was created, but Last Look definitely
2 revolved around header bidding. Absent the Last Look,
3 the result of AdX's own auction may have competed in
4 real-time against the result of the header bidding
5 auction by third-party buyers. And AdX's second-price
6 bid -- because this is in a 2P world at this point --
7 would compete against header bidding's first-price bid
8 because the auction had already run coming into AdX, and
9 then AdX would lose to that first-price bid for header
10 bidding.

11 AdX was effectively being able to use
12 information from that third-party exchange in header
13 bidding in its own auction. And I -- I reference that
14 in a fairly simplified graphic on page 81.

15 BY MR. HUNSBERGER:

16 Q. So what you describe as the Last-Look advantage
17 was the result of publishers adopting header bidding and
18 integrating it into DFP, correct?

19 MR. HILLEGAS: Objection, form.

20 THE WITNESS: I'm not certain I speak of
21 the result. I don't -- I don't know the original
22 reasons. Walking backwards from the code, I describe
23 what it was doing and then found documents that were
24 referencing it. But if there's a document -- there's a
25 Google document referencing why, I'd be happy to take a

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1 designed to give AdX an advantage when competing against
2 header bidding. It was simply the result of the header
3 bidding auction taking place before the AdX auction ran
4 and the way that publishers configured header bidding
5 line items to work with dynamic allocation.

6 Do you see that statement in Mr. Korula's
7 declaration?

8 A. I do.

9 Q. Do you agree with this declaration, that Last
10 Look was simply the result of the header bidding auction
11 taking place before the AdX auction ran and the way that
12 publishers configured header bidding line items to work
13 with dynamic allocation?

14 A. I'm not sure what he meant by "configured
15 header bidding line items." I would -- I would need to
16 see a positive and a negative, I guess, of the
17 configuration to really give a definitive.

18 Q. So we talked about earlier that publishers can
19 put header bidding wrappers on their page to run header
20 bidding auctions, correct?

21 A. Like pre-bid JS, yes.

22 Q. Correct.

23 And publishers can, as we talked about
24 earlier, feed the results of the header bidding auction
25 into DFP as a line item, correct?

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1 MR. HILLEGAS: Objection, form.

2 THE WITNESS: That's correct. That's
3 the -- the header bidding HP_bid, and all those values
4 that are passing in the line items.

5 BY MR. HUNSBERGER:

6 Q. And using that common understanding, do you
7 agree with Mr. Korula that the, quote/unquote, Last-Look
8 advantage was, quote, simply the result of the header
9 bidding auction taking place before the AdX auction ran
10 and the way that publishers configured header bidding
11 line items to work with dynamic allocation?

12 MR. HILLEGAS: Objection to form.

13 THE WITNESS: I'm really just going to need
14 more information. It feels like there needs to be an
15 extra sentence here that goes on to explain how these
16 publishers configured this. Because what this is
17 implying is there was a way that publishers could
18 configure it where AdX didn't need to do this, and it
19 was only that publishers configuring it in a specific
20 way resulted in AdX doing the Last Look. From my
21 understanding of the code, Last Look always ran from --
22 from that time period. I want to qualify with "that
23 time period."

24 Oh, and last question before I get water;
25 is that acceptable?

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1 Q. As you describe in your report, Bernanke was an
2 internal Google program that launched in 2013 to adjust
3 advertiser bids?

4 MR. HILLEGAS: Objection, form.

5 THE WITNESS: Yes. It was implemented in
6 four phases, starting in 2013.

7 BY MR. HUNSBERGER:

8 Q. And as you say in your report, in
9 paragraph 218: Bernanke allowed Google Ads to win more
10 auctions on behalf of advertisers?

11 MR. HILLEGAS: Objection, form.

12 THE WITNESS: Yes. That's a valid
13 statement.

14 BY MR. HUNSBERGER:

15 Q. And Project Bernanke was designed to increase
16 the number of auctions won by Google Ads and AdX and
17 increase the revenue of Google Ads, correct?

18 MR. HILLEGAS: Objection, form.

19 THE WITNESS: Yes, I believe that's taken
20 from a specific Google internal document describing
21 Project Bernanke, GOOG-AT-MDL-009831407 at 409.

22 BY MR. HUNSBERGER:

23 Q. And that is the opinion that you offer in
24 paragraph 218 in the first sentence, correct?

25 A. That is correct.

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1 Q. And do you have any reason to doubt the
2 document you cited for this proposition?

3 MR. HILLEGAS: Objection, form.

4 THE WITNESS: No. As I recall, that
5 document described what I saw in code.

6 BY MR. HUNSBERGER:

7 Q. With Project Bernanke, you describe in your
8 report how Google Ads used a [REDACTED]

9 [REDACTED]

10 MR. HILLEGAS: Objection to form.

11 THE WITNESS: Yes, that's correct.

12 BY MR. HUNSBERGER:

13 Q. A [REDACTED]

14 [REDACTED]

15 MR. HILLEGAS: Objection, form.

16 THE WITNESS: [REDACTED]

17 [REDACTED]

18 BY MR. HUNSBERGER:

19 Q. And you offered the opinion in paragraph 234
20 that: [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 A. Yes. That's why I verified [REDACTED]

24 [REDACTED]

25 THE WITNESS: For the court reporter,

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1 MR. HILLEGAS: Objection, form.

2 THE WITNESS: A transaction would not be
3 made.

4 BY MR. HUNSBERGER:

5 Q. So the publisher would not earn revenue on that
6 impression, correct --

7 MR. HILLEGAS: Objection, form.

8 BY MR. HUNSBERGER:

9 Q. -- without a transaction?

10 A. Two scenarios: Nothing clears the floor, no
11 transaction; house line item, transaction. Both of
12 those would result in zero payout.

13 Q. But if we return again to Dynamic Revenue
14 Share, if DRS reduced the AdX revenue share such that
15 the bid would meet the floor price, the publisher would
16 get that floor price as a revenue, correct?

17 MR. HILLEGAS: Objection, form.

18 THE WITNESS: This is DRS v.1?

19 BY MR. HUNSBERGER:

20 Q. Yes.

21 MR. HILLEGAS: Same objection.

22 THE WITNESS: Yes, because the first
23 version only lowered AdX's revenue share, never raising
24 it. If a bid is above the floor but the 20 percent AdX
25 revenue would cause it to fall below that floor, it was

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1 in that dynamic range, where DRS v.1 could be applied.

2 BY MR. HUNSBERGER:

3 Q. So again, going back to your report, the first
4 sentence in paragraph 258, you say that: DRS was
5 designed to increase the number of auctions in AdX that
6 produced a winning bid, correct?

7 MR. HILLEGAS: Objection, form.

8 THE WITNESS: That is right from that
9 Google internal document, GOOG-NE-12204977 at 981.

10 BY MR. HUNSBERGER:

11 Q. And you state in the first sentence of
12 paragraph 258 that that's also your opinion?

13 A. I believe that's verbatim from that citation.
14 We'd have to pull it up, but I believe that's verbatim.

15 Q. You cite the document as your source, but you
16 state that sentence as your opinion, correct?

17 MR. HILLEGAS: Objection, form.

18 THE WITNESS: It is giving the background
19 on DRS v.1.

20 BY MR. HUNSBERGER:

21 Q. And that sentence, in paragraph 258, the first
22 sentence, is one of the opinions in your report,
23 correct?

24 MR. HILLEGAS: Objection, form.

25 THE WITNESS: It is discussing DRS v.1 and

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1 Q. Do you have any opinions on whether any of the
2 features of Google products that you discuss in your
3 report benefitted or harmed advertisers, other than what
4 you just described?

5 MR. HILLEGAS: Objection to form.

6 THE WITNESS: I don't believe it was part
7 of the assignment, outside of technically describing how
8 those pieces operate.

9 BY MR. HUNSBERGER:

10 Q. Okay, Professor Hochstetler, I'd like to shift
11 to another Google product feature that you discuss in
12 your report. Are you familiar with Enhanced Dynamic
13 Allocation? We referred to it a couple of times in our
14 discussion earlier.

15 A. Yes.

16 Q. Referred to sometimes in your report as EDA,
17 for short?

18 A. That's correct. Enhanced Dynamic Allocation
19 was introduced in March 2014, and this allowed -- I
20 believe I discussed before, but it allowed guaranteed
21 line items, the items that had a contract, as long as
22 they were, quote, ahead of schedule, to compete in
23 real-time bidding against non-remnant line items from
24 other demand sources.

25 Q. So it's your understanding that Enhanced

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1 Dynamic Allocation allows AdX and remnant line items to
2 compete with guaranteed line items in real-time?

3 A. Yes, under those conditions I laid out.

4 Q. Guaranteed line items represent a specific
5 advertiser who has contracted to purchase a set number
6 of impressions at a given price, correct?

7 A. Yes, and I -- normally, I also think there's a
8 time limit for that because these are things like:
9 There's a Taylor Swift concert coming up, let's produce
10 ads for the Taylor Swift concert, and if the impressions
11 are after the concert happens, those are useless.

12 Q. And, Professor Hochstetler, before Google
13 introduced EDA, these guaranteed deals did not compete
14 for individual inventory against advertisers buying
15 through AdX, right?

16 MR. HILLEGAS: Objection, form.

17 THE WITNESS: That's correct. GPT would
18 pull the guaranteed deals in original DA, and those
19 guaranteed deals would run in priority.

20 BY MR. HUNSBERGER:

21 Q. And before Google introduced EDA, guaranteed
22 deals did not compete for individual impressions against
23 advertisers buying through tools represented by remnant
24 line items, correct?

25 MR. HILLEGAS: Objection to form.

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1 THE WITNESS: Correct. GPT would pull the
2 deals, and since guarantee always had a higher priority,
3 if they were available, they would run first before
4 remnant, and then finally, the house.

5 BY MR. HUNSBERGER:

6 Q. But after Google introduced EDA, guaranteed
7 deals did compete for individual impressions against
8 advertisers buying through tools represented by line- --
9 remnant line items, correct?

10 A. Correct, as long as those conditions were met,
11 as long as the guaranteed line items contract was far
12 enough through impressions that the opportunity cost
13 to -- to serve it was met. If -- if we need to serve a
14 million impressions in a week and we are on day six of
15 seven, we need to be far enough along in that that not
16 serving it, we won't lose that contract, that guaranteed
17 contract.

18 Q. Professor Hochstetler, I'd like to discuss a
19 document that you cite in your report, which I believe
20 we'll mark for the record as Hochstetler Exhibit 9.

21 (Exhibit 9 was marked for identification.)

22 MR. HUNSBERGER: And here's a copy and
23 copies for your counsel.

24 THE WITNESS: Thank you. Thank you.

25 BY MR. HUNSBERGER:

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ATTORNEY ERRATA SHEET FOR THE TRANSCRIPT OF:

Case Name: *The State of Texas, et al v. Google LLC*, Case No. 4:20-CV-00957
Deposition Date: October 1, 2024
Deponent: Jacob Hochstetler

CORRECTIONS

Page	Line	Change	Reason
8	16-17	Change “And do you understand you're testifying under oath?” to “Do you understand that you are testifying today under oath?”	Transcription Error
16	9-10	Change “I'm going to hand you a copy of what's been marked as Hochstetler Exhibit 3.” to “I'm going to hand you a copy of what's been marked for the record as Hochstetler Exhibit 3.”	Transcription Error
23	2	Change “for exempld” to “for example”	Transcription Error
25	1-4	Change “And are -- those cases where you previously supported an expert in preparing an expert report, are those the ones listed on your resumé where you have provided code reviews?” to “And are -- those cases where you previously supported an expert in preparing another expert report, are those the ones you listed here on your resumé where you have provided code reviews?”	Transcription Error
26	25	Change “on behalf on InfoGation” to “on behalf of InfoGation”	Transcription Error
46	8-9	Change “for bidding” to “forbidding”	Transcription Error
56	23	Change “operates demand-side platform” to “operates a demand-side platform”	Transcription Error
100	6-11	Change “It reads: Although waterfall auctions helped establish early ad serving logic, they have several technical limitations. One key disadvantage is that waterfall auctions are prone to latency, error and time-out issues.” to “It reads: “Although waterfall auctions helped establish early ad serving logic, they have several technical limitations. One key disadvantage is that waterfall auctions are prone to latency, error and time-out issues.””	Transcription Error
109	12-14	Change “The full quote is: It benefits the publisher by filling a remnant inventory. Without blocks or pricing	Transcription Error

		floors, AdX and AFC has a 99 percent fill rate.” to “The full quote is: “It benefits the publisher by filling a remnant inventory. Without blocks or pricing floors, AdX and AFC has a [REDACTED] fill rate.””	
117	4-9	Change “Q. -- for the second point, you say: The vCPM was first specified by publishers, either as the pre-negotiated CPM price with the line item's corresponding demand partner or as an estimate of the CPM the line item would likely generate based on historical performance.” to “Q. -- for the second point, you say: “The vCPM was first specified by publishers, either as the pre-negotiated CPM price with the line item's corresponding demand partner or as an estimate of the CPM the line item would likely generate based on historical performance.””	Transcription Error
125	10-15	Change “It says: Afterwards, code from the header bidding wrapper requests bids from other demand sources first, runs an auction to determine the winning bid, and adds the winning bid -- winner bidder and other information to the ad slot so the results of header bidding are sent to the publisher's ad server.” to “It says: “Afterwards, code from the header bidding wrapper requests bids from other demand sources first, runs an auction to determine the winning bid, and adds the winning bid -- winner bidder and other information to the ad slot so the results of header bidding are sent to the publisher's ad server.””	Transcription Error
128	12-15	Change “Background: This paper explores the topic of how Google demand sources (GDN, DBM) should respond to the growing trend where publishers manage multiple demand sources via a "header tag" implementation.” to “”Background: This paper explores the topic of how Google demand sources (GDN, DBM) should respond to the growing trend where publishers manage multiple demand sources via a "header tag" implementation.””	Transcription Error
128	20-23	Change “that reads: On the buy side, header bidding poses a different set of issues. When multiple exchanges are called for a single ad slot, buyers wind up bidding multiple times, resulting in self-competition?” to “that reads: “On the buy side, header bidding poses a different set of issues. When multiple exchanges are called for a single ad slot, buyers wind up bidding multiple times, resulting in self-competition”?”	Transcription Error
139-140	139:22-14	Change “Paragraph 17 of the declaration reads: The	Transcription Error

	0:5	fact that AdX would be called after the header call has been characterized by some third parties as a, quote, Last Look for AdX, but, quote, Last Look was not designed to give AdX an advantage when competing against header bidding. It was simply the result of the header bidding auction taking place before the AdX auction ran and the way that publishers configured header bidding line items to work with dynamic allocation.” to “Paragraph 17 of the declaration reads: “The fact that AdX would be called after the header call has been characterized by some third parties as a, quote, Last Look for AdX, but, quote, Last Look was not designed to give AdX an advantage when competing against header bidding. It was simply the result of the header bidding auction taking place before the AdX auction ran and the way that publishers configured header bidding line items to work with dynamic allocation.””	
141	8-11	Change “was, quote, simply the result of the header bidding auction taking place before the AdX auction ran and the way that publishers configured header bidding line items to work with dynamic allocation?” to “was “simply the result of the header bidding auction taking place before the AdX auction ran and the way that publishers configured header bidding line items to work with dynamic allocation”?”	Transcription Error
148-149	148:23-149:3	Change “The second sentence: This vCPM was used to inform the AdX auction price floor by comparing it to the highest tCPM from a guaranteed line item. The process of informing the AdX option price floor with the highest vCPM was known as Last Look. Do you see that?” to “The second sentence: “This vCPM was used to inform the AdX auction price floor by comparing it to the highest tCPM from a guaranteed line item. The process of informing the AdX option price floor with the highest vCPM was known as Last Look.” Do you see that?”	Transcription Error
149	19-23	Change “Q. And looking at your report, paragraph 180, you state that: Header bidding took advantage of Google's key-value pair feature to pass in targeting criteria such as the winning bid and bidder. Do you see that?” to “Q. And looking at your report, paragraph 180, you state that: “Header bidding took advantage of Google's key-value pair feature to pass in targeting criteria such as the winning bid and bidder.” Do you see that?”	Transcription Error

151	20-24	Change “The first sentence reads: Thus, Last Look incorporated third-party buyers' bids by receiving auction results from external sources, such as header bidding, and used them to floor AdX -- AdX's own auction. Do you see that?” to “The first sentence reads: “Thus, Last Look incorporated third-party buyers' bids by receiving auction results from external sources, such as header bidding, and used them to floor AdX -- AdX's own auction.” Do you see that?”	Transcription Error
163	16-21	Change “A. (As read): [REDACTED]” to “A. (As read): [REDACTED]”	Transcription Error
165	11-14	Change “Q. And in paragraph 282, you say: [REDACTED]” to “Q. And in paragraph 282, you say: [REDACTED]”	Transcription Error
182	8-10	Change “Q. And as you say in your report, in paragraph 218: Bernanke allowed Google Ads to win more auctions on behalf of advertisers?” to “Q. And as you say in your report, in paragraph 218: “Bernanke allowed Google Ads to win more auctions on behalf of advertisers”?”	Transcription Error
183	19-22	Change “Q. And you offered the opinion in paragraph 234 that: Google uses seven days of data to determine the optimal Bernanke multipliers and retrain the model every day, correct?” to “Q. And you offered the opinion in paragraph 234 that: “Google uses seven days of data to determine the optimal Bernanke multipliers and retrain the model every day,” correct?”	Transcription Error
198	18-21	Change “The first sentence of paragraph 262: The first version of DRS was launched in 2015, and only lowered AdX's revenue share, never raising it, as in	Transcription Error

		future versions of DRS.” to “The first sentence of paragraph 262: “The first version of DRS was launched in 2015, and only lowered AdX’s revenue share, never raising it, as in future versions of DRS.””	
204	5	Change “that suggest any version” to “that suggests any version”	Transcription Error
207	3-9	Change “second sentence reads: When AdX functioned as a second-price auction, Google observed that there was a sizeable gap between the highest bid and what the advertiser actually paid; i.e., the second-highest bid. Google therefore aimed to minimize the gap between the two values by setting the auction floor as close to the anticipated highest bid as possible?” to “second sentence reads: “When AdX functioned as a second-price auction, Google observed that there was a sizeable gap between the highest bid and what the advertiser actually paid; i.e., the second-highest bid. Google therefore aimed to minimize the gap between the two values by setting the auction floor as close to the anticipated highest bid as possible?””	Transcription Error
207	21-23	Change “Looking at paragraph 291 of your report: Google then used these statistics to derive per-buyer auction floors that maximized publisher revenue.” to “Looking at paragraph 291 of your report: “Google then used these statistics to derive per-buyer auction floors that maximized publisher revenue.””	Transcription Error
208	4-7	Change “The first sentence reads in part: Google modeled publisher revenue as a function of a floor price and calculated the floor price that yielded the maximum possible revenue” to “The first sentence reads in part: “Google modeled publisher revenue as a function of a floor price and calculated the floor price that yielded the maximum possible revenue.””	Transcription Error
222	3-5	Change “the second part of this quote that refers to: EDA, quote, has the highest customer satisfaction rate among optimization features?” to “the second part of this quote that refers to: EDA “has the highest customer satisfaction rate among optimization features?””	Transcription Error
225	22-23	Change “this refers to a DSP and ad network or a similar buying tool, correct,” to “this refers to a DSP, an ad network, or a similar buying tool, correct,”	Transcription Error
230	12-14	Change “Q. The heading at the very top of the page reads: Second-price RPO raised auction floors on a	Transcription Error

		per-buyer basis using historical AdX auction data.” to “Q. The heading at the very top of the page reads: “Second-price RPO raised auction floors on a per-buyer basis using historical AdX auction data.””	
253	10	Change “MR. HUNSBERGER: Pass the witness.” to “MR. HILLEGAS: Pass the witness.”	Transcription Error
253	22	Change “correct. That's what you're saying?” to “correct? That's what you're saying?”	Transcription Error

Date: October 31, 2024

Signature: /s/ James K. Hunsberger